Manitoba Agriculture

Information Update

GUIDELINES FOR ESTIMATING
DAIRY PRODUCTION COSTS
BASED ON A 50 COW HERD

91-03137/

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The production costs included in this budget are not intended as a cost study of the dairy industry in Manitoba. This guide is designed to provide planning information and a format for calculating costs of production for a typical 50 cow dairy enterprise.

This guideline examines three levels of production - 6000, 7500 and 9000 litres of milk/cow/year with a composition of 3.6 kg butterfat (BF) and 3.2 kg protein/hl milk. It is assumed that all three levels of production have adequate quota to cover production.

The guidelines can be useful for comparison purposes. Comparison of costs can be made with other farms or with one farm over a number of time periods. Projected plans can be compared with actual happenings as they unfold.

The assumptions on which costs were calculated are clearly defined in the supporting pages. Investment costs and labour rates may differ substantially for each operation.

When interpreting these costs for an individual situation, adjustments may be required. Each assumption must be examined and adjustments made where necessary.

DAIRY PRODUCTION COSTS PER COW (50 COW HERD)
(at three production levels)

Production Level (litres/cow/year)	6000 L	7500 L	9000 L	Your Farm
A. OPERATING COSTS				
1. Feed Costs:				
1.01 Lactating Cows:				
1.011 Forage	$ 466.40	$ 446.40	$ 426.40	$
1.012 Dairy Ration	307.80	419.40	531.00	
1.013 Protein Supplement	46.20	69.30	103.95	
1.014 Salt, Min. & Vitamins	22.40	22.40	22.40	
1.02 Dry Cows:				
1.021 Forage	34.00	34.00	34.00	
1.022 Dry Cow Grain Mix	14.00	14.00	14.00	
Total Feed Costs	$ 890.80	$ 1005.50	$ 1131.75	$
2. Other Operating Costs:				
2.01 Milk Rec., Reg. & Transfers	$ 31.16	$ 31.16	$ 31.16	$
2.02 Bedding	15.00	15.00	15.00	
2.03 Veterinary & Medicine	43.70	48.22	54.00	
2.04 Breeding	45.00	60.00	82.50	
2.05 Dairy Supplies	60.00	70.00	80.00	
2.06 Mkt, Transport, DHI Deduction	311.40	389.25	467.10	
2.07 Bldg, Equip, Mach. Repairs/Mtce.	138.00	138.00	138.00	
2.08 Utilities	80.00	80.00	80.00	
2.09 Insurance	37.54	39.16	40.73	
2.10 Manure Removal	20.00	20.00	20.00	
2.11 Replacement Cost	116.74	96.74	76.74	
2.12 Administrative Costs	20.00	20.00	20.00	
2.13 Property Taxes	27.98	27.98	27.98	
2.14 Miscellaneous	10.00	10.00	10.00	
Subtotal Operating Costs	$1,847.32	$2,051.01	$2,274.96	$
2.15 Interest On Operating	10.01	11.11	12.40	
TOTAL OPERATING COSTS	**$1,857.33**	**$2,062.12**	**$2,287.36**	$
B. FIXED COSTS				
3. Depreciation:				
3.01 Buildings	$ 100.36	$ 100.36	$ 100.36	$
3.02 Equipment	178.20	178.20	178.20	
4. Investment:				
4.01 Buildings	$ 110.39	$ 110.39	$ 110.39	$
4.02 Equipment	98.01	98.01	98.01	
4.03 Livestock	181.80	208.44	234.00	
TOTAL FIXED COSTS	**$668.76**	**$ 695.40**	**$ 720.96**	$
TOTAL OPERATING & FIXED COSTS	**$2,526.09**	**$2,757.52**	**$3,008.32**	$
C. LABOUR COSTS				
80 hours/cow @ $10.25/hour	$ 820.00	$ 820.00	$ 820.00	$
TOTAL COST OF PRODUCTION	**$3,346.09**	**$3,577.52**	**$3,828.32**	$
BREAKDOWN OF COSTS PER hl				
A. OPERATING				
1. Feed	$14.85	$13.41	$12.58	$
2. Other Operating & Interest	16.11	14.09	12.84	
B. FIXED	11.15	9.27	8.01	
C. LABOUR	13.67	10.93	9.11	
TOTAL REQUIRED TO COVER COSTS PER hl	**$55.78**	**$47.70**	**$42.54**	$

FEED REQUIREMENTS

ASSUMPTIONS:

1. Based on a 12.0 month calving interval (C.I.) subdivided into a 310-day lactation period and a 55-day dry period.

2. Cost of production guidelines calculated for three levels of production:

Average	- 6000 litres milk/cow/year
Above average	- 7500 litres milk/cow/year
Significantly above average	- 9000 litres milk/cow/year

3. Herd comprised of registered stock. All replacements are raised on-farm. Bull calves are sold within two weeks of age.

4. Herd average culling rate (including newly entered first calf heifers) is 24% per year.

5. Forages, dairy ration and protein supplement are valued at current market prices.

6. Capital costs based on current replacement cost for a completely equipped 50 cow tie stall facility with a separate hayshed.

7. Forage Quality:

   A. Lactating Cows - good quality alfalfa hay @ 85% dry matter (DM); and 20% crude protein (CP), 64% total digestible nutrients (TDN), 30% acid detergent fibre and 40% neutral detergent fibre on a DM basis.

   B. Dry Cows - average quality minimal legume:predominantly grassy hay @ 85% DM; 12% CP, 57% TDN, 40% ADF and 55% NDF.

8. Interest Rates: 10% on fixed costs and 14% on operating costs.

HERD PROFILE

1. Registered 50 cow herd comprised of 12 first calf heifers and 38 second lactation and older cows.

2. At any one time, 84% of the herd or 42 cows are lactating and 16% of the herd or 8 cows are in their dry period.

3. Assume market value of herd at $1,300, $1,500 and $1,700 respectively for the three different levels of production.

4. 48 replacement heifers ranging in age from one week to 24 months.

WORKSHEET

A. OPERATING COSTS — Your Farm

1. Feed Costs:

1.01 Lactating Cows: 625 kg cow producing either 19.4, 24.2 or 29.0 litres milk/day with a composition of 3.6 kg butterfat (BF) and 3.2 kg protein/hectolitre (hl). This is equivalent to annual milk production levels of 6000, 7500 and 9000 litres or 60.0, 75.0 and 90.0 hl respectively/cow.

Forage: Note - producers feeding haylage or corn silage, approximate hay equivalents are 1 tonne 85% DM hay = 2 tonnes 45% DM haylage = 3 tonnes 30% DM corn silage.

1.011 Forage Fed (square hay bales; includes a 10% wastage factor)

	6000 L	7500 L	9000 L	
DM Intake % of Bodyweight/Day	2.3	2.2	2.1	_____
kg/day (Inc. wasteage)	18.8	18.0	17.2	_____
Number of Days	310	310	310	_____
Number of Tonnes	5.83	5.58	5.33	_____
Dollars per Tonne	$80	$80	$80	_____
Total Forage Cost	**$466.40**	**$446.40**	**$426.40**	_____

1.012 Dairy Ration (based on a 16% CP coarse textured dairy ration)

	6000 L	7500 L	9000 L	
kg/day	5.5	7.5	9.5	_____
Number of Days	310	310	310	_____
Number of Tonnes	1.71	2.33	2.95	_____
Dollars per Tonne	$180	$180	$180	_____
Total Dairy Ration	**$307.80**	**$419.40**	**$531.00**	_____

Your Farm

1.013 Protein Supplement (based on a 36 to 44% CP commercial protein supplement that is fed as a topdress during first 120 to 180 days of lacation)

	6000 L	7500 L	9000 L	
kg/day	1.0	1.2	1.5	_____
Number of Days	120	150	180	_____
Number of Tonnes	0.12	0.18	0.27	_____
Dollars per Tonne	$385	$385	$385	_____
Total Protein Supp.	**$46.20**	**$69.30**	**$103.95**	_____

1.014 Salt/Minerals/Vitamins (same for all herds). Consume about 35.0 kg/cow/lactation. Based on
4.0 ounces/cow/day x 310 days =
1240 ounces or 35.0 kg/cow/lactation
35.0 kg/cow/lactation x $16.00/25 kg bag =
$22.40/cow/lactation _____

1.02 **Dry Cows:** 625 kg cow with a 55 day dry period (Same for all herds).
1.021 Forage Fed (includes a 15% wastage factor and a forage DM intake of 1.8% of bodyweight)

1.022 Dry Cow Grain Mix - fed a total of 100 kg or 0.1 tonnes of a specially formulated dry cow grain mix (i.e. carrier of minerals and vitamins; lead feeding) during the 55 day dry period.

	Forage	Grain Mix	
kg/day	15.5	1.82	_____
Number of Days	55	55	_____
Number of Tonnes	0.85	0.10	_____
Dollars per Tonne	$40	$140	_____
Total	**$34.00**	**$14.00**	_____

Your Farm

2. Other Operating Costs:

2.01 Milk Recording, Registrations & Transfers (same for all herds).

Supervised Official Milk Recording
(50 cows @ $21/cow/year) = $1,050.00 _____

Optional Somatic Cell Count Report Program
(50 cows @ $2.50/cow/year) = $125.00 _____

Annual Herd MMRC Registration Fee = $25.00

Registrations (24 head @ $12/head) = $288.00 _____

Transfers (paid by seller;
5 head @ $14/head) = $70.00 _____

Total $1,558.00 _____
or $31.16/cow _____

(Note: Owner Sampler Milk Recording program costs $9/cow/year.)

2.02 Bedding (same for Herds A, B and C)

Approx. 1 tonne/cow/year @ $15/tonne = **$15/cow** _____

2.03 Veterinary & Medicine

	6000 L	7500 L	9000 L	
Drugs (Blackleg, IBR, Mastitis, etc.)	$1,000	$1,100	$1,200	_____
Service:				_____
Rate Per Hour	$63	$63	$63	_____
Number of Hours (Assumed 12 visits)	15	17	20	_____
Mileage - $1/km one way (assumed round trip = 40 km)	$240	$240	$240	_____
Total Veterinary & Medicine per herd	**$2,185**	**$2,411**	**$2,700**	_____
or per cow	**$43.70**	**$48.22**	**$54.00**	_____

Your Farm

2.04 Breeding

Costs vary depending upon: (1) price/vial of semen; (2) service charge/visit; and (3) number of services/conception. Assume 1.5 services/conception @ $15/vial of semen for 6000 litre herd, $25/vial of semen for 7500 litre herd and $40/vial of semen for 9000 litre herd and a $15 service charge/visit for Herds A, B and C.

	6000 L	7500 L	9000 L	
Semen	$22.50	$37.50	$60.00	_____
Services	22.50	22.50	22.50	_____
Total Cost	**$45.00/cow**	**$60.00/cow**	**$82.50/cow**	_____

Note: For producers interested in breeding their own cattle, start-up costs for a tank, liquid nitrogen and A.I. supplies will total about $800. Before breeding their own cattle, it's recommended that producers take a certified A.I. course, the cost of which will be $150 or more depending upon the organization running the course. Annual operating costs for liquid nitrogen and A.I. supplies will run about $150.

2.05 Dairy Supplies

Chlorine, filters, soap, acid, udder wash, teat dip, inflations, hoses, gaskets, system maintenance and service calls.

6000 litres: **$3,000/herd/year or $60/cow** _____

7500 litres: **$3,500/herd/year or $70/cow** _____

9000 litres: **$4,000/herd/year or $80/cow** _____

2.06 Marketing, Transportation & DHI Fee Deduction

(For the purposes of this publication, deductions applicable to only the industrial portion of milk shipped are blended over all milk shipped. A ratio of 54.5% industrial to 45.5% fluid was used to arrive at the blend deduction).

		Cost/hl
	Milk Hauling	$ 2.10
*	M.S.Q. Administration (blended)	0.08
	Board Administration	0.19
	Pool Administration	0.14
	Market Expansion	0.77
**	C.D.C. In-quota Levy (blended)	1.88
	D.H.I. Fee Deduction	0.03
	Total	$ 5.19 per hl

	Your Farm
6000 L - 60.0 hl @ $5.19/hl = $311.40/cow/yr	_____
7500 L - 75.0 hl @ $5.19/hl = $389.25/cow/yr	_____
9000 L - 90.0 hl @ $5.19/hl = $467.10/cow/yr	_____

* M.S.Q. Administration = $0.14/hl (on industrial milk portion only)
** C.D.C. In-Quota Levy (effective August 1, 1990)
= $3.44/hl (on industrial milk portion only)

Note: Over-quota Levy (effective August 1, 1990)
= $33.00/hl (on industrial milk portion only)

Note: Butterfat Limit Program (B.L.P.) - a levy of $9.17 is charged for every kg of butterfat (BF) produced in excess of the herd's base allotment for BF production. This levy is applicable to only within quota production. B.L.P. became effective November 1, 1990. BF base allotment varies among herds depending upon the historical BF average of each herd.

2.07 **Bldgs., Equip., & Mach. Repairs & Mtce.** Your Farm
(same for all herds).

Assumed four percent of the average investment in buildings & equipment was allocated to repairs and maintenance. For purposes of this budget, we have assumed $3,900 for the herd as adequate for this cost or **$78/cow.** _____

Truck & tractor, fuel, repairs, maintenance, insurance, license. It is estimated that the tractor will be used for 500 hours & the truck will travel 16,000 Km per year. For purposes of this budget, we have assumed $3,000 for the herd or **$60/cow.** _____
Total = $138/cow _____

2.08 **Utilities (same for Herds A, B and C)**

Hydro & telephone costs were estimated from producer records to be $4,000/year for a 50 cow herd or **$80/cow.** _____

2.09 **Insurance (same for all herds); for fire, hail & wind**

Buildings & Equipment
$196,500 @ $0.55/$100 coverage = **$1,080.75** _____

Livestock (including replacement stock)

$101,000 @ $0.55/$100 coverage = **$555.50** _____
$115,800 @ $0.55/$100 coverage = **$636.90**
$130,000 @ $0.55/$100 coverage = **$715.00**

Tractor (Dairy share)
$6,500 @ $0.27/100 coverage = **$ 17.55** _____

Truck (Autopac)
$346 x 50% dairy share = **$ 173.00**
Public Liability (approximately) **$ 50.00** _____

	6000 L	7500 L	9000 L	
Total	$1,876.80	$1,958.20	$2,036.30	_____
or	$37.54/cow	$39.16/cow	$40.73/cow	_____

2.10 **Manure Removal (same for all herds).**

Assumed an annual manure removal charge of **$1,000/herd or $20/cow** _____

2.11 Replacement Cost

Assumptions:

1) All herd replacements are raised on farm;
2) Newborn mortality rate = 4.0%/yr or 2 animals/yr.
3) 50:50 ratio of female to male births. Assuming a mortality rate at birth of 2 calves/yr and a herd average (C.I.) of 12.0 months, should get 48 calves /yr or 24 heifer calves/yr.
4) Of the 24 replacement heifers, 7 will be culled for one reason or another (either open or bred) and one will die prior to calving. Remaining 16 heifers will enter the main herd as replacements.
5) Herd average culling rate (including newly entered first calf heifers) is 24% per year;
6) Cows sold for dairy purposes valued at $1,300, $1,500 and $1,700 for 6,000, 7,500 and 9,000 litres. respectively;
7) Market value of average replacement heifer culled prior to first calving is $725;
8) Market value of bull calves sold at 2 to 4 weeks of age is $100;
9) Two cows from milking herd die during the year;
10) Value of replacement dairy heifer is based on a total rearing cost (doesn't include initial value of calf at birth) of $1,350 to an average age at first calving of 24 months. (See basic rearing cost breakdown below)

Operating Costs

A. Feed costs	$ 625.00
B. Other Operating Costs	450.00
Fixed costs	150.00
Labor costs	125.00
Total Rearing Cost to 24 Months	$1,350.00

Net Replacement Cost Calculation:

	Your Farm
I. Rearing Cost: (Same for all herds)	
16 replacement heifers enter herd @ $1,350	_____
8 replacement heifers that were sold or died prior to calving. Avg. rearing cost @ $550	_____
	_____
II Revenue Offsetting Rearing Cost:	
Sell 5 head for dairy purposes @ $1,300, $1,500, $1,700 respectively	_____
Cull 9 head as D3 cows for beef purposes (avg. weight @ 625 kg @ $1.10/kg)	_____
Cull 7 heifers prior to first calving @ $725	_____
Sell 24 bull calves @ 2 to 4 weeks of age @ $100	
2 cows die $0.00	_____
1 heifer dies $0.00	_____

Net Replacement Cost	6000 L	7500 L	9000 L
I Rearing Cost	$26,000.00	$26,000.00	$26,000.00
II Revenue Offsetting Cost	$20,163.00	$21,163.00	$22,163.00
Net Replacement Cost	$ 5,837.00	$ 4,837.00	$ 3,837.00
Net Replacement Cost/Cow	$ 116.74	$ 96.74	$ 76.74

2.12 Administrative Costs (same for Herds A, B and C) Your Farm

Accounting, office supplies, tax returns, legal fees, dairy related magazine subscription fees, etc. estimated at $1,000/herd/year or **$20/cow.** _____

2.13 Property Taxes

Building $208,000 x .85 x 27.1% x mill rate (.025) = $1,198
House ($50,000 x .25) x .85 x 48.6% x mill rate (.039) = 201
Total = $1,399
or $27.98/cow

2.14 Miscellaneous (same for Herds A, B and C)

Small tools, hardware, etc. estimated at $500/herd/year or **$10/cow.** _____

2.15 Interest On Operating

Interest was calculated by taking 1/2 of the operating costs and multiplying it by a monthly interest rate of 14.0% per annum.

6000 litres: [($1,847.32 x 1/2) x 13.0%] ÷ 12 = $10.01 _____

7500 litres: [($2,051.01 x 1/2) x 13.0%] ÷ 12 = $11.11 _____

9000 litres: [($2,288.23 x 1/2) x 13.0%] ÷ 12 = $12.40 _____

B. FIXED COSTS (Based on Tie Stall Barn Costs; same for all herds)

3. Depreciation: Buildings, Machinery & Equipment
- 20-year straight line depreciation on buildings
- 10-year straight line depreciation on machinery & equipment

$$\frac{\text{Original Cost - Salvage Value}}{\text{Useful Life}}$$

3.01 Buildings

Total Building Cost	$111,500	_____
Salvage Value	- $ 11,150	_____
Useful Life	÷ 20 years	_____
	= $ 5,018 /herd/year	_____
	or $100.36 /cow	_____

3.02 Machinery & Equipment — Your Farm

Total Mach. & Equip.	$99,000	
Salvage Value	- $ 9,900	
Useful Life	÷ 10 years	
	= $ 8,910 /herd/year	
	or $178.20 /cow	

4. Investment: (Buildings, Machinery & Equipment & Livestock)

The average value of buildings, machinery & equipment & livestock at an annual rate of 9%.

$$\frac{\text{Original Cost + Salvage Value}}{2} \times .09$$

4.01 Buildings

Total Building Cost	$111,500	
Salvage Value	+ $ 11,150	
Average	÷ 2	
Investment Rate	x 9 %	
	= $5,519.25 /herd/year	
	or $110.39 /cow	

4.02 Machinery & Equipment

Total Mach. & Equip.	$99,000	
Salvage Value	+ $ 9,900	
Average	÷ 2	
Investment Rate	x 9 %	
	= $4,900.50 /herd/year	
	or $ 98.01 /cow	

4.03 Livestock:
Assume a registered herd of 50 cows valued at $1,300, $1,500, $1,700 per cow and 48 replacements valued at $750, $850, $950 per heifer.

	6000 L	7500 L	9000 L
Total livestock value	$101,000	$115,800	$130,000
Investment rate	x 9%	x 9%	x 9%
Total investment per year	$ 9,090	$ 10,422	$ 11,700
Total investment per cow/yr	$ 181.80	$ 208.44	$ 234.00

C. LABOUR COSTS (same for all herds)

Assume 11 hours/day or 80 hours/cow/year @ $10.25/hour = **$820.00/cow**

CAPITAL COSTS

I. TIE STALL BARN
(Buildings and Equipment Assumed New for a 50 Cow Herd)

BUILDINGS

Barn - single storey 40′ X 126′ . . . . . (includes concrete, materials, air intakes & labour)	$ 75,000
Milkhouse - 18′ X 22′ . . . . . (includes concrete, materials, septic tank & labour)	15,000
Hay Shed - 36′ X 96′ (includes concrete, materials & labour).	18,000
Steel Grain Bin - 11 tonne capacity . . . . . (includes bin, augers, ladder, foundation & labour)	3,500
TOTAL BUILDINGS	**$111,500**

(The above price includes all material, concrete, labour, electrical and plumbing)

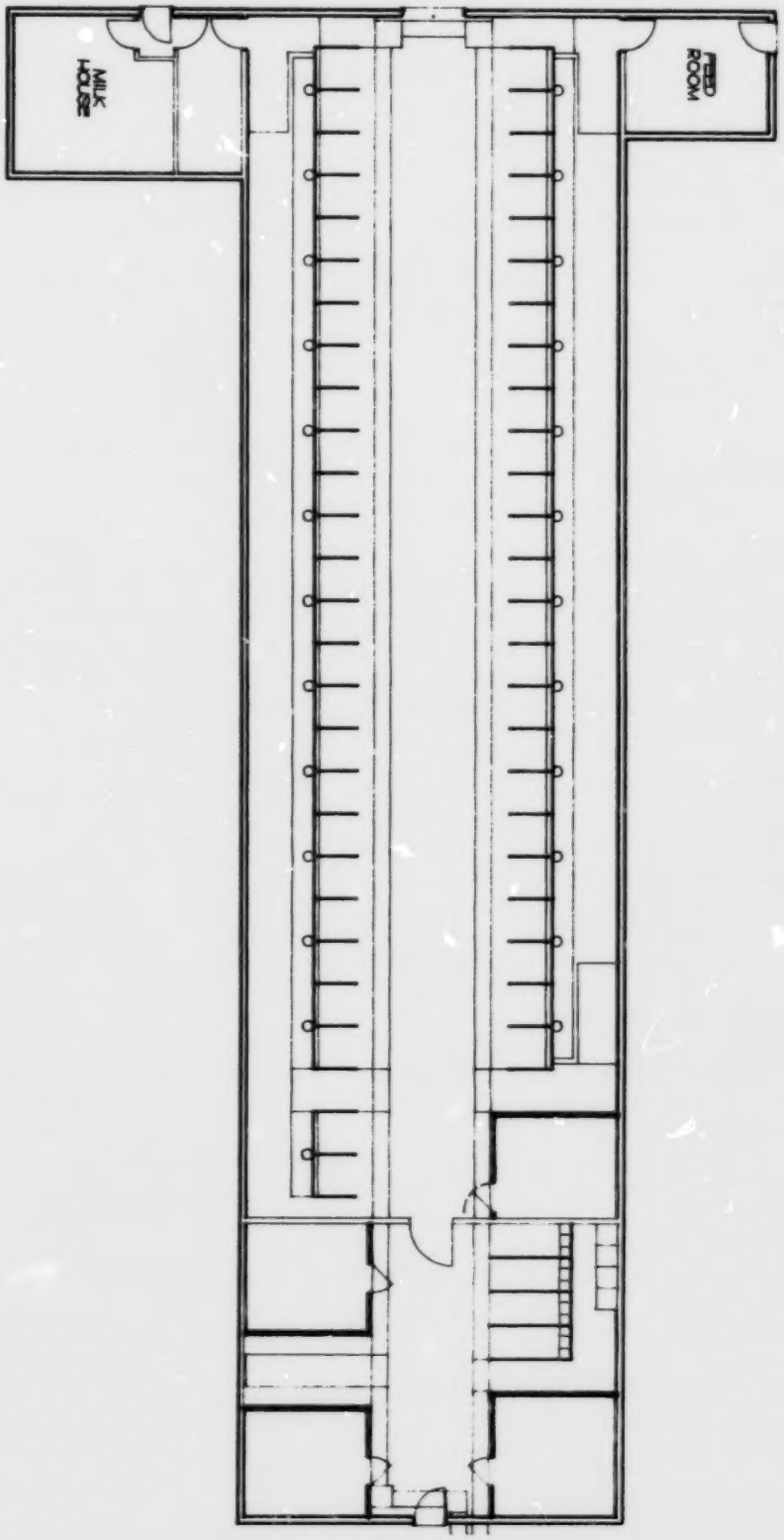
EQUIPMENT & MACHINERY

Barn Equipment:	
- 50 comfort stalls (i.e. 4′ X 5′10" to 6′0")	
- 2 maternity pens (10′ X 12′)	$ 10,000
- plumbing (includes 27 water bowls and piping) . . .	
Equipment:	
Complete Milking System (i.e. 2" pipeline with 4 units; stainless steel sink, 60 gallon hot water tank, etc.) . . .	
4 Milk Meters (5/8" size)	
Bulk Tank and Accessories	
(i.e. 4500 litre capacity).	
Milk House Equipment	
Pressure System (i.e. 1 1/2 H.P. pump and 100 gallon tank).	75,000
Gutter Cleaner	
Ventilation and Controls	
(includes 3 fans and thermostats)	
Manure Pump and Storage (i.e. pad plus earthern walls) . .	
Electric Wiring	
TOTAL EQUIPMENT COST	**$ 85,000**

MACHINERY

Tractor - $32,500 @ 20% (dairy share)	$ 6,500
1/2 Ton Truck - $15,000 @ 50% (dairy share)	7,500
TOTAL MACHINERY	**$ 14,000**
TOTAL BUILDINGS, EQUIPMENT AND MACHINERY.	**$210,500**

TIE–STALL DAIRY BARN



II. FREE STALL BARN
(Buildings and Equipment Assumed New for a 50 Cow Herd)

BUILDINGS

Barn - 44' x 100' free stall barn c/w 26' x 24' parlour area, 18' x 22' milkhouse and a 24' x 24' calf and maternity pen	
- Total Area 5,886 sq. ft.	
- 1,092 sq. ft. milkhouse and parlour	$ 33,000
- 4,794 sq. ft. Free Staff barn & maternity	$ 72,000
Hay Shed - 36' X 96' (includes concrete, materials & labour).	18,000
Steel Grain Bin - 11 tonne capacity (includes bin, augers, ladder, foundation & labour)	$ 3,500
TOTAL BUILDINGS	**$126,500**

(The above price includes all material, concrete, labour, electrical and plumbing)

EQUIPMENT

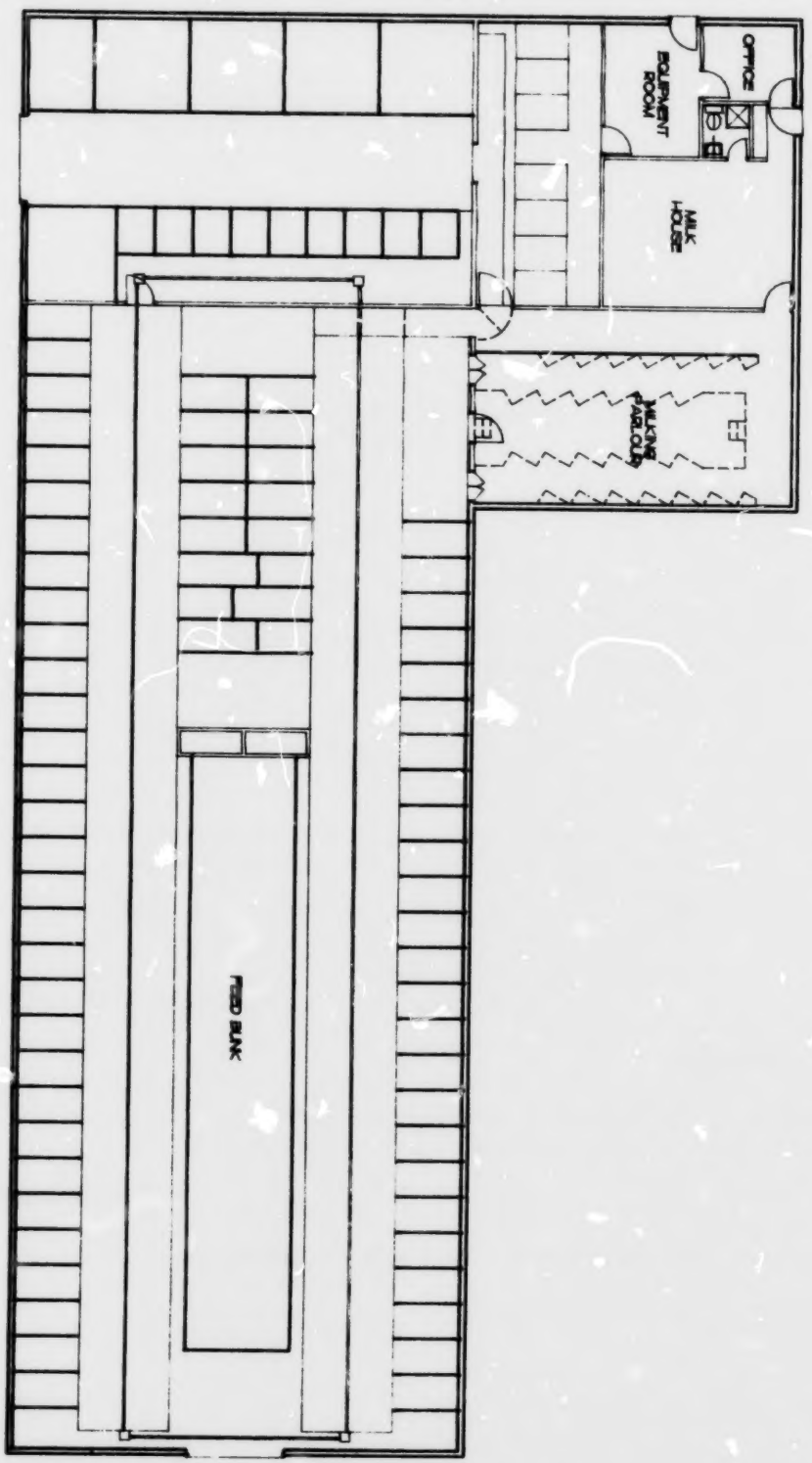
- 50 free stalls
- 2 maternity pens
- Feed bunk
- Plumbing - to water tank
- Double 4 Herringbone Parlour c/w manual gates
- Complete Pipeline with 85 lit stainless steel receiver group 3" low-line, CIP, 3" vacuum line, 150 CFM ASME vacuum pump & balance tank
- Bulk Tank - 43500 L bulk tank & accessories
- Alley Scraper
- Manure pump & storage (i.e. pad plus earthen walls)
- Ventilation - Exhaust & circulation fans & thermostats
- Computerized feeders with flex auger & feed tank 2 feeding stations with 45 tags
- Silage conveyor & feeder

TOTAL BARN EQUIPMENT $74,500

MACHINERY

Tractor - $32,500 @ 20% (dairy share)	$ 6,500
1/2 Ton Truck - $15,000 @ 50% (dairy share)	7,500
TOTAL MACHINERY	**$ 14,000**
TOTAL BUILDINGS, EQUIPMENT AND MACHINERY.	**$215,000**

FREE STALL DAIRY BARN



MACHINERY

Tractor - $32,500 @ 20% (dairy share)	$ 6,500
1/2 Ton Truck - $15,000 @ 50% (dairy share)	7,500
TOTAL MACHINERY	**$ 14,000**
TOTAL BUILDINGS, EQUIPMENT AND MACHINERY.	**$215,000**

III. OPEN FRONT HEIFER BARN

- 20' x 72' open front heifer barn c/w 36' x 72' concrete pad (includes barn area) & feed bunk	$18,000
Penning & Heated watering bowls	
- 3 Livestock waterers/heated with plumbing	
- 170 lin. ft. panels & gates	5,000
TOTAL COST HEIFER BARN	**$23,000**

IV. CALF NURSERY (24' x 26')

Building	
- 24' x 26' calf nursery (624 sq. ft.)	
- Electrical	$12,000
Equipment	
- 4 x 8 galv. calf pens (12) c/w double pail holders hay feeders and plastic pails	
- ventilation	
- 5 KW electrical heater	5,000
TOTAL COST CALF NURSERY	**$17,000**

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FOR FURTHER INFORMATION SEE YOUR LOCAL MANITOBA AGRICULTURE OFFICE.